LIGHTNING

Lightning is one of the most underrated severe weather hazards, yet ranks as the second-leading weather killer in the United States. Deadlier than hurricanes or tornadoes, lightning strikes in America kill an average of 62 people and injure at least 300 others each year.

Unlike other weather hazards that often involve sophisticated watches and warnings from NOAA's National Weather Service, lightning can occur anywhere there is a thunderstorm. That's why the National Weather Service conducts a year-round campaign to educate people about lightning risks.

Lightning is caused by the attraction between positive and negative charges in the atmosphere, resulting in the buildup and discharge of electrical energy. The rapid heating and cooling of air produces a shock wave that results in thunder. During a thunderstorm, raindrops acquire extra electrons, which are negatively charged. The surplus of negative electrons seeks out a positive charge from the ground. As they flow from the clouds, they knock other electrons free, creating a conductive path. This path follows a zigzag shape that jumps between randomly distributed clumps of charged particles in the air. When the two charges connect, current surges through the jagged path, creating a visible lightning bolt.

High winds, darkening skies, rainfall and brilliant flashes of light are warning signs for lightning strikes. While many lightning casualties happen at the beginning of an approaching storm, more than 50 percent of lightning deaths occur after the thunderstorm has passed. If thunder is heard, then the storm is close enough for a lightning strike. It is important to seek safe shelter immediately.

Lightning Quick Facts

- Lightning often strikes the same place repeatedly if it is a tall, pointed isolated object
- Seeking shelter underneath trees is the second leading location for lightning casualties
- In Florida, lightning is responsible for more deaths than all other weather sources combined
- Lightning can heat its path five times hotter than the surface of the sun

The safest place to be when lighting threatens is indoors. Enclosed structures are safer than open structures. However, when inside during a thunderstorm, avoid contact with conductive surfaces, including metal doors, window frames, wiring and plumbing. Generally, enclosed metal vehicles (not convertibles), with the windows rolled up, provide good shelter from lightning.

If a storm is approaching, avoid being outside. Gazebos, rain or picnic shelters, baseball dugouts, convertible vehicles, and golf carts do *not* provide adequate shelter. When lightning can be seen or heard, the danger is already present. Louder or more frequent thunder means lightning activity is approaching, increasing the risk for lightning injury or death. As a last resort, people caught outside should squat low to the ground in an open place away from trees, poles, or metal objects, and make sure that this place is not subject to flooding.

Coordinators of outdoor events should monitor the weather and evacuate participants when appropriate. School buses are an excellent lightning shelter. Consider placing lightning safety tips and/or the action plan in game programs, flyers, scorecards, etc., and placing lightning safety cards around the area. Lightning warning signs are effective means of communicating the lightning threat to the general public and to raise awareness. Most importantly, stay informed by listening to NOAA Weather Radio, All Hazards.

Veins of lightning illuminate Tucson, Ariz.